8. MALAWI

1. HZW GENERATION

Generators: The main HZW generators in Malawi that were alluded to during interviews were:

- *Industries using oils, particularly garages and vehicle repair operations* - There is no record of the primary sources or the volumes produced.

- *Hospitals, medical and pharmaceutical facilities (i.e. medical waste and expired drugs)* - These facilities produce medical waste consisting of human tissue, hypodermic syringes and needles, swabs, etc. The majority of this waste is considered to be hazardous. Although the Ministry of Health and the respective medical facilities are responsible for the management of this waste, incinerator facilities at most institutions are not operational and as such disposal becomes the responsibility of the local assembly in which the facility is located. Unfortunately, due to a lack of co-ordination and an absence of suitable means for disposal, the medical waste enters the general waste stream and is disposed of on sites designated for general waste.

  Expired drugs and other pharmaceuticals also represent a hazardous waste problem. The time taken to distribute nearly expired drugs, as well as the donation of nearly expired or already expired drugs results in the creation of hazardous waste once they have expired. The problem is aggravated through the lack of co-ordination of such operations, storage space and suitable disposal methods.

- *Electricity suppliers*: The historic use of hazardous PCBs as additives in transformer oils used by the electricity suppliers, represents another hazardous waste problem in Malawi. While there have been initiatives to convert to PCB-free lubricants, there are some transformers (operational and decommissioned) as well as spent oils that are contaminated with PCBs.

- *Agrochemical users*: Malawi has also received donations of agrochemicals from abroad. The mismatch between supply and demand resulted in stockpiles of expired agrochemicals. While such donations are not commonplace, reformulations of products, poor transport logistics, product switching and the likes will always result in expired agrochemicals accumulating.

In addition it can be expected that hazardous wastes emanate from chemical industries, paint manufacturer, tanneries, pulp and paper mils, soap and detergent factories, breweries and textile industries. The Environmental Affairs Department (EAD) did not have any information available pertaining to these sources.

Types and Quantities of Waste: There is no detailed information available regarding the types and quantities of waste produced in Malawi.

Import/Export: According to the country fact sheet, decisions have been taken not to consent totally to the import of hazardous wastes and other wastes for final disposal, recovery or recycling. In addition, decisions have been taken to limit the export of hazardous wastes and other wastes destined for final disposal, recovery or recycling only to countries with the necessary technologies and know-how. No information to the contrary was obtained during the site visit.

No data pertaining to actual amounts of hazardous waste imported or exported was made available.

2. HZWM ORGANISATIONS

Regulatory Authorities: The *Environmental Affairs Department* (EAD) is the head authority (i.e. competent authority) responsible for waste management. Their role with regard to HZWM is shared with other ministries and departments, inter alia the *Department of Agriculture* (DoA), *Department of Labour* (DoL), *Ministry of Health* (MoH), *Malawi Revenue Authority* (MRA) and the *Ministry of Commerce and Industry* (MCI). It is unknown how the roles of these respective bodies will change with the finalisation of the Waste Management Policy, which is presently in draft format.

Focal Point: The *Environmental Affairs Department* is also the focal point for HZWM in respect of the Basel Convention. However, issues relating to HZWM requiring their attention are dealt with on an *ad hoc* basis and are apparently transferred to other Ministries as the need arises.

The absence of a designated desk officer within the EAD appears to present a problem with respect to co-ordination, monitoring and implementation of the Convention. It should be noted, however, that absence of Mr Kabwaza (Director of EAD) during the consultant's visit may result in observations documented herein not being a true reflection of the status of the Focal Point's functioning.

Country Coordinator: From the meetings held during the visit no entity presented itself as a possible National Coordinating Entity. However as indicated above this may be the result of Mr Kabwaza's absence, since he would have probably been best suited to indicate such capabilities within Malawi.

Other Role Players: In spite of the absence of legislation relating specifically to HZWM, several other role players are involved in the management of this issue. The parties include, inter alia, the *Agricultural Trading Company* (ATC); the *Pesticides Association of Malawi* (PAM); the *Agricultural Development and Marketing Corporation* (ADMARC); the *Electricity Supply Commission of Malawi* (ESCOM) and the respective city assemblies based throughout Malawi. Their roles with regard to HZWM are detailed below.

The ATC, PAM and ADMARC are all involved in agricultural activities within the country and are thus responsible for the use and management of agrochemicals. Although the consultant was informed by the EAD of their potential role with regard HZW emanating from the use and disposal or agrochemicals none of the parties were able to provide useful information in this regard.

As the prime supplier of electricity within Malawi, ESCOM have a substantial inventory of transformers in use or decommissioned. These transformers represent a hazardous waste issue in that they contain PCBs. While there is an initiative to no longer use PCB containing lubricants in this industry, there are a number of transformers (in use or decommissioned) that are contaminated with PCBs. The extent of this problem could not be ascertained since ESCOM allegedly do not keep any record to this affect.

The management of waste (in particular disposal) in each region of Malawi is the responsibility of the local city assembly. Due to the absence of designated sites or methods for the handling and disposal of hazardous waste within the country this responsibility has indirectly reverted to the city assembly. Indications from discussions with the LCA would suggest that they collect and dispose of hazardous waste from medical facilities, industry and indiscriminate dumping. In addition their waste disposal sites also receive such waste through direct disposal from third parties. It could be expected that such occurrences are also commonplace in the other city assemblies, but this could not be verified during the visit.

3. POLICY AND LEGISLATION

Legislation: There is no specific waste management legislation in place in Malawi. Consequently they are currently using temporary local standards adopted from inter alia USEPA and WHO standards. Nevertheless a draft waste management policy is in place and they are in the process of developing national standards.

As alluded to above the various line ministries have portions of their respective legislation which address waste and hazardous waste management issues. The consultant was, however, unable to obtain greater detail or clarification in this regard from the parties interviewed.

Enforcement: All of the above-mentioned parties are involved in enforcement to varying degrees. While the EAD plays the lead role as co-ordinator, monitor and supervisor and the ministries and lead agencies carry out some of the direct enforcement, the lack of legislation to this affect undermines these initiatives. It is expected that the new legislation will improve the enforcement but this may take some time and will be dependent on the resources that are allocated for this purpose.

4. FINANCING

There was no information made available on the expenditure related to HZWM.

5. CURRENT HZWM PRACTICE

No information pertaining to cleaner production, recycling or transport was forthcoming from the interviews undertaken in Malawi.

Storage: Expired agrochemicals and drugs are allegedly stored prior to disposal. Details regarding these facilities is sparse, however, it appears that these facilities are centrally located, i.e. in major towns. This presents to two main issues, firstly the necessary logistical arrangements to get the expired products to the storage facility and secondly the potential storage space limitations.

Treatment: With the exception of certain medical facilities using chlorine for disinfecting of some of the medical waste no other treatment methods or facilities were described by interviewees.

Disposal: The country fact sheet indicates that disposal only takes place by means of landfilling and that there is no incineration. However the disposal methods described during the interviews are presented below:

- *Direct to the environment*: In the absence of waste receptacles, sufficient collection and transport facilities and adequate disposal sites or methodologies, the majority of waste is disposed of directly to the environment. Direct disposal to the environment takes many forms such as burial, burning and 'littering' (indiscriminate disposal on surface). These methods of disposal present a great risk to others in the broader environment due to associated pollution potential (i.e. leachates and toxic emissions) and inadvertent exposure/contact.

  The most notable example of this practice are the methods of burning and burial of medical wastes at the various medical facilities. These practices appear to be condoned by authorities, however the MoH has noted that incomplete combustion results in some of the expired drugs being collected and being sold on the 'black' market.

- *Landfilling*: The country fact sheets documents the following with respect to landfilling in Malawi:

A non-engineered landfill exists in Blantyre.
A non-engineered landfill exists in Lilongwe.
The sites are operated by city/local authority in each town.
Hazardous and non-hazardous wastes are mixed.

Findings from the current visit support this. At establishment the Lilongwe waste site was considered to be well engineered and had World Bank support. However once the World Bank withdrew financial support the site was no longer correctly managed. Attempts were also made to try getting financial assistance from Sweden, but this has been unsuccessful.

Estimates of waste collection in Lilongwe are that only 30 % of the estimated 300 t/d produced is collected. At present the city assembly has deployed approximately 100 skips around the city, but they only have 1 vehicle to collect these skips (they have another 4 which are no longer in running order). These skips are only serviced once a week. No outsourcing is practised. There is, however, a proposal to privatise refuse collection for high earners. This proposal has been submitted to the World Bank for their assistance.

Commercial areas are serviced and charged for disposal, but this is not inclusive of all operations present. In other words industrial areas are perceived to be able to pay for waste management services, and as such those industries using such a facility are charged accordingly.

- *Incineration*: Although the majority of medical facilities allegedly have 'incinerators', they are more akin to kilns or ovens and do not operate at suitably high temperatures. Incinerators and the ovens are costly to operate and as result they are under-utilised.

6. HZWM CAPACITY

Consultancy Capacity: The consultant was able to establish that there are a number of international and local consultants working in the field of environment issues. However no specific mention was made of work relating to hazardous waste management. The lack of legislation relating to waste management is likely to be a primary cause for the lack of consultant work in this field, since there is no demand for such facilities from a legal perspective.

Education and Training Capacity: There is no specific HZW training at present within university curricula, but the universities are likely to have some course content that is applicable to HZW management. However, this could not be ascertained.

The consultant visited the *Malawi Institute of Management* to determine its involvement in waste management training. While they are presently not involved in hazardous waste specifically, their systems and facilities would enable them to assist with training.

Public Awareness: There are and have been campaigns on the need for preservation of the environment and for proper management of waste. However, these initiatives have primarily entailed issues relating to the general environment. Consequently public awareness to HZWM is considered to be low.

7. HZWM PROJECTS

The CSIR from South Africa are currently undertaking a medical waste management study for the World Bank and others (not determined) – details of which are not yet available.

The Department of Environment had submitted a proposal to Norwegian donors regarding the establishment of a waste management and disposal system. The donors have subsequently withdrawn and no other donors have shown interest.

8. NEEDS FOR PRODUCTS AND SERVICES

Perceived Status of the RTTTC: The EAD and the MoH are aware of the existence of the RTTTC, through their involvement in Basel related meetings. Other stakeholders consulted were, however, unaware of the centre, but there was much interest in what the centre proposed to offer, although the issue of funding was the primary concern.

Expressed Needs: All stakeholders expressed a need for broad based training covering all aspects of hazardous waste. In addition there is a need to integrate this with other environmental management training.

Scope exists for specific training courses in the various specialised disciplines of hazardous waste management – i.e. financial, customs and tax, analytical, biochemical, etc.

Ability and Willingness to Pay: While all stakeholders were positive towards the activities of the RTTTC, payment for products and services was the main concern expressed by all. There are very limited amounts for training in the public sector, for instance the LCA stated they would be unable to allocate any funds towards such training.

LIST OF PEOPLE INTERVIEWED

Environmental Affairs Department (EAD)
Dr. Aloysius Kamperewera – Deputy Director

Department of Labour
Mr Nyangulu – Occupational Health & Safety

Ministry of Health
Mr Blesssius Tauzie – Public Health Officer

Central Medical Stores
Mr Kadewere

Pharmacy Medicines & Poisons Board
Mr. Wynn Chalira – Deputy Registrar

ESCOM
Mr Mwanjasi/Mr Bowleni

Lilongwe City Assembly
Mr Bizeck Sondo – Acting Director Cleaning Services

COUNTRY KEY FIGURES

Indicator	Value	Unit	Source
Total Area	118.5	Km^2	WB/UNEP
Land Area	94.0	Km^2	WB
Coastline:	0	Km	WB
Population	10.8	Million	WB
Total Fertility Rate	2.2 (5.3)	%	WB
Labour force (as % of total population) 1996		%	
R & D scientists and technicians (per 1,000 people) 1990-96		Nos.	
Public expenditure on higher education (as % of all levels) 1990-95		%	
Gross Domestic Product (GDP)	1.7	Billion US$	WB
% agriculture	38.0	%	UNDP
% industry	19.2	%	UNDP
% Services	42.8	%	UNDP
GDP per capita	190	US$	WB
Manufacturing Value Added per capita	21.0	current US$	UNIDO
Share of MVA in GDP	12.9	% at current prices	UNIDO
Environment international agreements	*Party to:* Biodiversity, Climate Change, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Marine Life Conservation, Nuclear Test Ban, Ozone Layer Protection, Wetlands *signed, but not ratified:* Law of the Sea		Central Intelligence Agency
Key Environmental Concerns:	deforestation; land degradation; water pollution from agricultural runoff, sewage, industrial wastes; siltation of spawning grounds endangers fish populations		WB/UNEP